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Snell

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[54] **HIGH DATA RATE SPREAD SPECTRUM TRANSCEIVER AND ASSOCIATED METHODS**

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[52] **U.S. Cl.** **375/200**; 375/205; 375/206; 375/208; 375/209

[58] **Field of Search** 375/200, 205, 375/206, 208, 209, 210, 279, 280

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[57] **ABSTRACT**

A spread spectrum radio transceiver includes a high data rate baseband processor and a radio circuit connected thereto. The baseband processor preferably includes a modulator for spread spectrum phase shift keying (PSK) modulating information for transmission via the radio circuit. The modulator may include at least one modified Walsh code function encoder for encoding information according to a modified Walsh code for substantially reducing an average DC signal component to thereby enhance overall system performance when AC-coupling the received signal through at least one analog-to-digital converter to the demodulator. The demodulator is for spread spectrum PSK demodulating information received from the radio circuit. The modulator and demodulator are each preferably operable in one of a bi-phase PSK (BPSK) mode at a first data rate and a quadrature PSK (QPSK) mode at a second data rate. These formats may also be switched on-the-fly in the demodulator. Method aspects are also disclosed.

61 Claims, 8 Drawing Sheets